CLAWAR 2013 Program

Sunday, July 14th

13.00 – 18.00	Registration open	Venue: Aerial Conference Centre Lobby
18.00 – 20.00	Welcome Reception Aerial Conference Centre, 7th Floor, Building 10 235 Jones St., Broadway, Sydney 2007, University of Technology, Sydney	

Monday, July 15th

09.00 – 09.20	Conference Opening Session Aerial Conference Centre, 7th Floor, Building 10 235 Jones St., Broadway, Sydney 2007

Keynote Address – 1
Session Chair: Gurvinder S. Virk

Date: Monday 15 July 2013			Venue: Harris, Jones, Broadway Rooms
Time	Paper ID	Proc. Page	Presentation
09.20 – 10.20	4	8	Exoskeleton systems for medical and civilian applications *Homayoon Kazerooni*

10.20 – 10.40	**Coffee Break**	Venue: Lobby

Session – A1: Multi-legged Robots
Session Chair: Manuel Armanda

Date: Monday 15 July 2013		Time: 10.40 – 12.40	Venue: Harris Room
Time	Paper ID	Proc. Page	Presentation
10.40 – 11.00	73	511	A1.1 - Actuator sizing for highly dynamic quadruped robots based on squat jumps and running trots *Hamza Khan, Claudio Semini and Darwin Caldwell*
11.00 – 11.20	25	215	A1.2 - Adaptive control of leg position for hexapod robot based on somatosensory feedback and organic computing principles *Ahmad Al-Homsy, Jan Hartmann and Erik Maehle*
11.20 – 11.40	30	761	A1.3 - Biped walking over rough terrain by adaptive ground reference map *Ning Wu, Chee-Meng Chew and Aun Neow Poo*

11.40 – 12.00	53	471	A1.4 - Design and prototyping of active-suspension-based 4-legged running robot with anteroposterior asymmetry in body *Kyoko Nishimura, Kazuyoshi Tsutsumi, Shinji Sakio and Koji Shibuya*
12.00 – 12.20	19	435	A1.5 - Development of hexapod robot supported mechanically using pneumatic rubber artificial muscles *Hiroki Tomori, Yusuke Hirata, Taro Nakamura and Hisashi Osumi*
12.20 – 12.40	100	709	A1.6 - Development of a quadruped robot model in simmechanics *Manuel Silva, Ramiro Barbosa and Tomás Castro*

Session – B1: Human Assist Devices Session Chair: Abbas Dehghani			
Date: Monday 15 July 2013		Time: 10.40 – 12.40	Venue: Jones Room
Time	Paper ID	Proc. Page	Presentation
10.40 – 11.00	74	93	B1.1 - Variable impedance control of a parallel robot for ankle rehabilitation *Sheng Quan Xie and Yun Ho Tsoi*
11.00 – 11.20	24	35	B1.2 - Development of a lower extremity exoskeleton system for walking assistance while load carrying *Wan soo Kim, Hee don Lee, Dong hwan Lim, Jung soo Han and Chang soo Han*
11.20 – 11.40	90	109	B1.3 - A simple load estimation of a patient during a standing assistance motion *Takahiro Yamada, Daisuke Chugo, Shoyo Yokota and Hiroshi Hashimoto*
11.40 – 12.00	52	59	B1.4 - Actuator with adjustable-rigidity and embedded sensor for an active orthosis knee joint *Manuel Cestari, Daniel Sanz-Merodio, Juan Carlos Arevalo, Xavier Carrillo and Elena Garcia*
12.00 – 12.20	69	153	B1.5 - A comparison of a passive and variable-damping controlled leg prosthesis in a simulated environment *Jie Zhao, Karsten Berns, Roberto Baptista and Antonio Bo*
12.20 – 12.40	42	43	B1.6 - Dynamic coupling characteristics of a semi-active knee prosthesis *Mohammed Awad, Abbass Dehgahni, David Moser and Saeed Zahedi*

Session – C1: Climbing Robots Session Chair: John Billingsley			
Date: Monday 15 July 2013		Time: 10.40 – 12.20	Venue: Broadway Room
Time	Paper ID	Proc. Page	Presentation

10.40 – 11.00	43	343	C1.1 - Climbing robot equipped with a postural adjustment mechanism for conical poles *Yasuhiko Ishigure, Haruhisa Kawasaki, Taichi Kato, Katuyuki Hirai, Nobuyuki Iinuma and Satoshi Ueki*
11.00 – 11.20	9	309	C1.2 - Examination of surface feature analysis and terrain traversability for a wall-climbing robot *Daniel Schmidt, Marcel Jung and Karsten Berns*
11.20 – 11.40	59	701	C1.3 - Finite element modelling of the adhesion system of a vortex based climbing robot *Filippo Bonaccorso, Salvatore D'Urso, Domenico Longo and Giovanni Muscato*
11.40 – 12.00	105	375	C1.4 - Optimal design of a magnetic adhesion system for climbing robots *Peter Ward, Dikai Liu, Ken Waldron and Mahdi Hassan*
12.00 – 12.20	51	578	C1.5 - Studies of total adhesive force of multiple magnetic wheels for a climbing robot *Arsit Boonyaprapasorn, Kaned Thung-Od, Rardchawadee Silapunt and Thavida Maneewarn*

12.40 – 14.00	**Lunch Break**	Venue: Aerial Function Centre

Session – G1: Plenary Lectures Session Chair: Gurvinder S. Virk			
Date: Monday 15 July 2013		Time: 14.00 – 15.20	Venue: Harris, Jones, Broadway Rooms
Time	Paper ID	Proc. Page	Presentation
14.00 – 14.20	10	807	G1.1 - Human motion capture, localization and interaction based on wearable inertial and contact sensors *Qilong Yuan and I-Ming Chen*
14.20 – 14.40	89	833	G1.2 - Challenges of the changing robot markets *Gurvinder Singh Virk, Carol Herman, Roger Bostelman and Tamas Haidegger*
14.40 – 15.00	115	841	E3.4 - OFEX 2.0: Database for performance evaluation of object feature extraction algorithms *Ki-Yeop Sung and Seungbin Moon*
15.00 – 15.20	05	849	G1.3 - Ethical assessment of robots *M. Osman Tokhi*

15.20 – 15.40	**Tea Break**	Venue: Lobby

Session – D1: Locomotion Control Session Chair: Dikai Liu			
Date: Monday 15 July 2013		Time: 15.40 – 17.40	Venue: Harris Room
Time	Paper ID	Proc. Page	Presentation
15.40 – 16.00	63	495	D1.1 - A behavior-based library for locomotion control of kinematically complex robots *Malte Langosz, Lorenz Quack, Alexander Dettmann, Sebastian Bartsch and Frank Kirchner*
16.00 – 16.20	112	667	D1.2 - A novel hybrid spiral-dynamics random-chemotaxis optimization algorithm with application to modelling of a flexible robot manipulator *Ahmad Nor Kasruddin Nasir and M. Osman Tokhi*
16.20 – 16.40	66	281	D1.3 - A simplified variable admittance controller based on a virtual agonist-antagonist mechanism for robot joint control *Xiaofeng Xiong, Florentin Wörgötter and Poramate Manoonpong*
16.40 – 17.00	56	189	D1.4 - BFA optimisation of control parameters of a new structure two wheeled robot on inclined surface *Saad Agouri, M. Osman Tokhi, Abdulla Almeshal and Khaled Goher*
17.00 – 17.20	86	651	D1.5 - Force sensing and control during movement and object manipulation in MERO walking robots *Ion Ion, Curaj Adrian, Vasile Aurelian, Dumitru Iulia and Stamatescu Grigore*
17.20 – 17.40	41	729	D1.6 - Velocity control of serial elastic actuator based on EKF estimator and neural network *Yichao Mao, Rong Xiong, Qiuguo Zhu and Jian Chu*

Session – E1: Bipedal Robots Session Chair: Surya P. N. Singh			
Date: Monday 15 July 2013		Time: 15.40 – 17.20	Venue: Jones Room
Time	Paper ID	Proc. Page	Presentation
15.40 – 16.00	81	529	E1.1 - A hip joint structure for biped robot with reduced DOF's of motion *Satoshi Ito, Akihiro Nakazawa, Takeshi Onozawa, Shingo Nishio and Minoru Sasaki*
16.00 – 16.20	37	463	E1.2 - An actuated continuous spring loaded inverted pendulum (slip) model for the analysis of bouncing gaits *Daniel Jacobs, Linus Park and Kenneth Waldron*
16.20 – 16.40	32	383	E1.3 - Compliance foot system design for bipedal robot walking over uneven terrain *Ning Wu, Boon-Hwa Tan and Chee-Meng Chew*

16.40 – 17.00	57	822	E1.4 - Estimation of the trunk attitude of a humanoid by data fusion of inertial sensors and joint encoders *Siddhartha Khandelwal and Christine Chevallereau*
17.00 – 17.20	93	537	E1.5 - Exploring the Lombard paradoxon in a bipedal musculoskeletal robot *Katayon Radkhah and Oskar von Stryk*

Session – F1: Actuation Session Chair: Abul Azad			
Date: Monday 15 July 2013		Time: 15.40 – 17.20	Venue: Broadway Room
Time	Paper ID	Proc. Page	Presentation
15.40 – 16.00	47	257	F1.1 - A resilient robotic actuator based on an integrated sensorized elastomer coupling *Jan Paskarbeit, Salvatore Annunziata and Axel Schneider*
16.00 – 16.20	46	249	F1.2 - Bio-inspired elbow impedance modulation using a compliant technical joint drive *Salvatore Annunziata, Jan Paskarbeit and Axel Schneider*
16.20 – 16.40	39	693	F1.3 - Design of SMA based actuators used in robotics *Muhammet Ozturk and Basaran Bahadir Kocer*
16.40 – 17.00	15	327	F1.4 - Development of worm-rack driven cylindrical crawler unit *Jun-ya Nagase, Koichi Suzumori and Norihiko Saga*
17.00 – 17.20	54	273	F1.5 - Improvement of energy consumption by movement of center of rotation of joint *Kazutoshi Tanaka, Satoshi Nishikawa and Yasuo Kuniyoshi*

17.20 – 18.20	**CLAWAR Association Annual General Meeting**	Venue: Harris, Jones, Broadway Rooms

Tuesday, July 16th

Keynote Address – 2 Session Chair: Giovanni Muscato			
Date: Tuesday 16 July 2013			Venue: Harris, Jones, Broadway Rooms
Time	Paper ID	Proc. Page	Presentation
09.20 – 10.20	1	3	TIRAMISU : FP7-Project for an integrated toolbox in Humanitarian Demining, focus on UGV, UAV, technical survey and close-in-detection *Yvan Baudoin*

10.20 – 10.40	**Coffee Break**	Venue: Lobby

Session – A2: Multi-legged Robots Session Chair: Piotr Skrzypczynski				
Date: Tuesday 16 July 2013			Time: 10.40 – 12.40	Venue: Harris Room
Time	Paper ID	Proc. Page	Presentation	
10.40 – 11.00	6	163	A2.1 - DODEKAPOD as universal intelligent structure for adaptive parallel spatial self-moving modular robots *Sergey Sayapin, Anatoly Karpenko and Hiep Dang Xuan*	
11.00 – 11.20	95	789	A2.2 - Efficiently using RGB-D data to self-localize a small walking robot in man-made environments *Piotr Skrzypczynski*	
11.20 – 11.40	98	555	A2.3 - Inverse dynamics for a quadruped robot locomoting along slippery surfaces *Samuel Zapolsky, Evan Drumwright, Ioannis Havoutis, Jonas Buchli and Claudio Semini*	
11.40 – 12.00	29	451	A2.4 - Event driven ground-impedance identification for legged robots *Juan Carlos Arevalo, Manuel Cestari, Daniel Sanz-Merodio and Elena Garcia*	
12.00 – 12.20	106	399	A2.5 - HEX-PIDERIX: A six-legged walking climbing robot to perform inspection tasks on vertical surfaces *Xochitl Yamile Sandoval-Castro, Mario A. Garcia-Murillo, Jonny Paul Zabala-DePaz and Eduardo Castillo-Castaneda*	
12.20 – 12.40	72	503	A2.6 - Effects of neck swing motion on the body posture of a four-legged robot *Koji Shibuya and Kenji Matsuhira*	

Session – B2: Human Assist Devices Session Chair: Abbas Dehghani

Date: Tuesday 16 July 2013			Time: 10.40 – 12.40	Venue: Jones Room
Time	Paper ID	Proc. Page	Presentation	
10.40 – 11.00	33	223	B2.1 - Implementation of an adjustable compliant knee joint in a lower-limb exoskeleton *Daniel Sanz-Merodio, Manuel Cestari, Juan Carlos Arevalo and Elena Garcia*	
11.00 – 11.20	20	19	B2.2 - The designing of the exoskeleton leg with pneumatic drives *Artyom Sukhanov, Valery Gradetsky, Maxim Knyazkov, Eugeniy Semyonov and Ivan Ermolov*	
11.20 – 11.40	21	27	B2.3 - Motion control algorithms for the exoskeleton equipped with pneumatic drives *Anastasiya Kryukova, Valery Gradetsky, Maxim Knyazkov, Evgeny Semyonov, Ivan Ermolov and Artyom Sukhanov*	
11.40 – 12.00	75	68	B2.4 - A personal robot integrating a physically-based human motion tracking and analysis *Consuelo Granata, Philippe Bidaud, Ragou Ady and Joseph Salini*	
12.00 – 12.20	91	232	B2.5 - New propulsion system with pneumatic artificial muscles *Ivanka Veneva*	
12.20 – 12.40	92	117	B2.6 - Exoskeletons for assisting human walking *Gurvinder Singh Virk and Indrawibawa Nyoman*	

Session – C2: Field Robots Session Chair: Gabriel.Aguirre-Ollinger				
Date: Monday 16 July 2013			Time: 10.40 – 12.20	Venue: Broadway Room
Time	Paper ID	Proc. Page	Presentation	
10.40 – 11.00	26	85	C2.1 - Transition analysis of a biped pole-climbing robot -- CLIMBOT *Haifei Zhu, Yisheng Guan, Wenqiang Wu, Xuefeng Zhou and Hong Zhang*	
11.00 – 11.20	34	241	C2.2 - Development of a wall climbing robot using the mobile mechanism of traveling waves propagation *Yutaka Mizota, Kazutoshi Takahashi, Yusuke Goto and Taro Nakamura*	
11.20 – 11.40	45	392	C2.3 - New design of peristaltic crawling robot with an earthworm muscular structure *Hikaru Nozari, Satoshi Tesen, Norihiko Saga, Jun-Ya Nagase and Hiroki Dobashi*	
11.40 – 12.00	97	547	C2.4 - An automated system for systematic testing of locomotion on heterogeneous granular media *Feifei Qian, Kevin Daffon, Tingnan Zhang and Daniel Goldman*	

12.00 – 12.20	22	171	C2.5 - Aquatic multi-robot system for lake cleaning *Pranay Agrawal and Bishakh Bhattacharya*

12.40 – 14.00	**Lunch Break**	Venue: Aerial Function Centre

Keynote Address – 3 Session Chair: Manuel Armanda			
Date: Tuesday 16 July 2013			Venue: Harris, Jones, Broadway Rooms
Time	Paper ID	Proc. Page	Presentation
14.00 – 15.00	3	7	Muscle coordination of human locomotion *Marcus Pandy*

15.00 – 15.20	**CLAWAR Association Report, CLAWAR 2014 &2015**	Venue: Harris, Jones, Broadway Rooms

15.20 – 15.40	**Tea Break**	Venue: Lobby

Session – D2: Locomotion Control Session Chair: Seungbin Moon				
Date: Tuesday 16 July 2013			Time: 15.40 – 17.40	Venue: Harris Room
Time	Paper ID	Proc. Page	Presentation	
15.40 – 16.00	49	740	D2.1 - Low-dimensional user control of autonomously planned whole-body humanoid locomotion motion towards motor-imagery BCI application *Karim Bouyarmane, Joris Vaillant and Jun Morimoto*	
16.00 – 16.20	35	719	D2.2 - Model-based elastic tendon control for electrically actuated musculoskeletal bipedal robots *Katayon Radkhah and Oskar von Stryk*	
16.20 – 16.40	40	625	D2.3 - Neural control of a three-legged reconfigurable robot with omnidirectional wheels *Poramate Manoonpong, Florentin Wörgötter and Pudit Laksanacharoen*	
16.40 – 17.00	64	659	D2.4 - Object grasping with dual flexible manipulator using genetic algorithms *Mohd Abdul Hadi Hassan and M. Osman Tokhi*	
17.00 – 17.20	77	519	D2.5 - Previewed impedance adaptation to coordinate upper-limb trajectory tracking and postural balance in disturbed conditions *Aurelien Ibanez, Philippe Bidaud and Vincent Padois*	

17.20 – 17.40	55	179	D2.6 Hybrid spiral dynamic bacterial chemotaxis optimisation for hybrid fuzzy logic control of a novel two wheeled robotic vehicle *Abdullah Almeshal, Khaled Goher, M. Osman Tokhi and Ahmad N. K. Nasir*

Session – E2: Bipedal Locomotion Session Chair: Giovanni Muscato			
Date: Tuesday 16 July 2013		Time: 15.40 – 17.40	Venue: Jones Room
Time	Paper ID	Proc. Page	Presentation
15.40 – 16.00	104	125	E2.1 - Hopping machine: A tool for human running simulation and for legged robots and exoskeleton design *André H. Maia, Sérgio Laquini Jr, Antônio Bento Filho, Victor Hugo Brito Fernandes and Elena Garcia*
16.00 – 16.20	76	101	E2.2 - A mobile 3d vision-based embedded system for robust estimation and analysis of human locomotion *Cong Zong, Philippe Bidaud and Xavier Clady*
16.20 – 16.40	14	571	E2.3 - Shuffle turn of humanoid robot simulation based on EMG measurement *Masanao Koeda, Takayuki Serizawa and Yuta Matsui*
16.40 – 17.00	60	487	E2.4 - Walking despite the passive compliance: Techniques for using conventional pattern generators to control intrinsically compliant humanoid robots *Przemyslaw Kryczka, Petar Kormushev, Kenji Hashimoto, Hun-ok Lim, Nikolaos Tsagarakis, Darwin Caldwell and Atsuo Takanishi*
17.00 – 17.20	8	411	E2.5 - Reinforcement learning of bipedal lateral behaviour and stability control with ankle-roll activation *Bernhard Hengst*
17.20 – 17.40	11	419	E2.6 - Obstacle/gap detection and terrain classification of walking robots based on a 2D laser range finder *Patrick Kesper, Eduard Grinke, Frank Hesse, Florentin Wörgötter and Poramate Manoonpong*

Session – F2: Configuration Session Chair: Daisuke Chugo			
Date: Tuesday 16 July 2013		Time: 15.40 – 18.00	Venue: Broadway Room
Time	Paper ID	Proc. Page	Presentation
15.40 – 16.00	7	141	F2.1 - Integrated design, modelling and analysis of two-wheeled wheelchair for disabled *Abqori Aula, Tareq M. Altalmas, Salmiah Ahmad, Rini Akmeliawati, Shahrul Naim Sidek and M. Osman Tokhi*

16.00 – 16.20	67	585	F2.2 - Quantitative kinematic performance comparison of reconfigurable leg-wheeled vehicles *Aliakbar Alamdari, Robin Herin and Venkat Krovi*
16.20 – 16.40	107	749	F2.3 - State to state motion planning for underactuated systems using a modified rapidly exploring random tree algorithm *Rina Shvartsman, Ying Tan and Denny Oetomo*
16.40 – 17.00	108	633	F2.4 - The passive dynamics of walking and brachiating robots: Results on the topology and stability of passive gaits *Nelson Rosa Jr. and K. M. Lynch*
17.00 – 17.20	88	359	F2.5 - Layered body for flexible mono-tread mobile track *Takafumi Haji, Shinichi Araki, Tetsuya Kinugasa, Koji Yoshida, Hisanori Amano, Ryota Hayashi, Kenichi Tokuda and Masatsugu Iribe*
17.20 – 17.40	28	643	F2.6 - Modeling and analysis of robotic grasping using soft fingertips *Akhtar Khurshid, Abdul Ghafoor, M Afzaal Malik and Yasar Ayaz*
17.40 – 18.00	23	677	F2.6 - Modelling of movement of the three-link robot with operated friction forces on the horizontal surface *Sergey Jatsun, Lyudmila Volkova, Grigoriy Naumov and Andrey Yatsun*

19.30 – 22.00 (Boarding 19.15)	**Banquet**	Venue: Matilda III, Pier 26, Cockle Bay

Wednesday, July 17th

Keynote Address – 4 Session Chair: Philippe Bidaud			
Date: Wednesday 17 July 2013			Venue: Harris, Jones, Broadway Rooms
Time	Paper ID	Proc. Page	Presentation
09.20 – 10.20	2	6	Anthropomorphic biological equipment *Yoshihiko Nakamura*

10.20 – 10.40	**Coffee Break**	Venue: Lobby

Session – A3: Walking Robots Session Chair: Piotr Skrzypczynski			
Date: Wednesday 17 July 2013		Time: 10.40 – 12.40	Venue: Harris Room
Time	Paper ID	Proc. Page	Presentation
10.40 – 11.00	27	443	A3.1 - Local reflex generation for obstacle negotiation in quadrupedal locomotion *Michele Focchi, Victor Barasuol, Ioannis Havoutis, Jonas Buchli, Claudio Semini and Darwin G. Caldwell*
11.00 – 11.20	78	773	A3.2 - Method for estimating location and yaw angle of a six-legged robot for omni-directional walking control *Hiroaki Uchida, Kouhei Takahashi and Masaya Suzuki*
11.20 – 11.40	12	427	A3.3 - Motion control for the 6-legged robot in extreme conditions *Yury Golubev, Victor Korianov, Vladimir Pavlovsky and Alexey Panchenko*
11.40 – 12.00	94	797	A3.4 - Recognition of 3D objects for walking robot equipped with multisense-SL sensor head *Janusz Bedkowski, Karol Majek, Andrzej Masłowski and Piotr Kaczmarek*
12.00 – 12.20	31	459	A3.5 - The turtle, a legged submerged inspection vehicle *John Billingsley*
12.20 – 12.40	38	335	A3.6 - Unconventional five-legged robot for agile locomotion *Marek Wasik, Mikolaj Wasielica and Piotr Skrzypczynski*

Session – B3: Human Interactive Devices Session Chair: Daniel Schmidt		
Date: Wednesday 17 July 2013	Time: 10.40 – 12.40	Venue: Jones Room

Time	Paper ID	Proc. Page	Presentation
10.40 – 11.00	102	291	B3.1 - Determination of trajectories using non-invasive BCI techniques in 3D environments *T. Garcia-Egea, C. A. Díaz-Hernández, J. Lopez-Coronado and J. L. Contreras-Vidal*
11.00 – 11.20	65	85	B3.2 - Dynamics of human lower limbs using CGA data and BSIP predictive equations *Antônio Bento Filho, Victor Hugo Brito Fernandes, André Hemerly Maia, Elena Garcia, Anselmo Frizera and Teodiano Bastos*
11.20 – 11.40	99	563	B3.3 - LAURON V: Optimized leg configuration for the design of a bio-inspired walking robot *Arne Roennau, Georg Heppner, Lars Pfotzer and Ruediger Dillmann*
11.40 – 12.00	16	11	B3.4 - Optimization-based gait planning for wearable power-assist locomotor by specifying via-points *Chang Hyun Sung, Takahiro Kagawa, Yoji Uno*
12.00 – 12.20	68	593	B3.5 - Enhancing personal electric vehicles using reconfigurable design *Robin S. Hérin, Aliakbar Alamdari and Venkat N. Krovi*
12.20 – 12.40	79	599	B3.6 - Hand-manoeuvred wheelchair using wheels fitted with feet for enhanced mobility *T. Okada, H. Wada, N. Mimura, T. Shimizu and K. Nagata*

Session – C3: Field Robots Session Chair: Seungbin Moon			
Date: Wednesday 17 July 2013		Time: 10.40 – 12.40	Venue: Broadway Room
Time	Paper ID	Proc. Page	Presentation
10.40 – 11.00	87	617	C3.1 - Compliance contact control of mecanum wheeled mobile robot for improving safety *Naotaka Nishigami, Naoyuki Takesue, Rikiya Makino, Kouhei Kikuchi, Kousyun Fujiwara and Hideo Fujimoto*
11.00 – 11.20	13	199	C3.2 - Compliant backbone structures in mobile robots *Nicole Kern, Richard Bachmann, Ryan Michols, Ronald Triolo and Roger Quinn*
11.20 – 11.40	48	265	C3.3 - Derivation of mathematical models of the peristaltic crawling robot for maintenance of a mixing tank *Yosuke Morishita, Daisuke Sannohe, Tatsuya Osawa, Tomoya Tanaka and Taro Nakamura*
11.40 – 12.00	17	301	C3.4 - Development of a peristaltic crawling inspection robot with pneumatic artificial muscles for a 25A elbow pipe *Tatsuya Kishi, Taro Nakamura and Megumi Ikeuchi*
12.00 – 12.20	18	207	C3.5 - Development of two types of maintenance robots for a jacket inside a mixing tank *Tomoya Tanaka, Taro Nakamura, Daisuke Sannohe, Yosuke*

			Morisita and Mitsugu Tanaka
12.20 – 12.40	96	367	C3.6 Surface adaptation robot for defect detection by performing continuously an ultrasound wheel probe *Hernando Leon-Rodriguez*

14.40 – 14.00	**Lunch Break**	Venue: Aerial Function Centre

Session – D3: Sensing and Location Session Chair: Lars Pfotzer			
Date: Wednesday 17 July 2013		Time: 14.00 – 15.00	Venue: Harris Room
Time	Paper ID	Proc. Page	Presentation
14.00 – 14.20	84	781	D3.1 - Cooperative multi-robot localization with radio-based sensors *Lars Pfotzer, Soeren Bohn, Jan Oberlaender, Georg Heppner, Arne Roennau and Ruediger Dillmann*
14.20 – 14.40	44	51	D3.2 - Covered area detection based on brightness change of inner camera images for crawler robot *Kenichi Tokuda, Tatsuya Hirayama, Tetsuya Kinugasa, Takafumi Haji and Hisanori Amano*
14.40 – 15.00	113	317	D3.3 development of humanoid robot teaching system based on a RGB-D sensor *Chuntao Leng, Qixin Cao, Bo Fang, Yang Yang and Zhen Huang*

Session – E3: Sensing and Feature Extraction Session Chair: Hernando Leon-Rodriguez			
Date: Wednesday 17 July 2013		Time: 14.00 – 15.00	Venue: Jones Room
Time	Paper ID	Proc. Page	Presentation
14.00 – 14.20	70	351	E3.1 - CAMINANTE: A platform for sensitive walking *Vadim Chernyak, Ennio Clarretti, Stephen Nestinger and Euardo Torres-Jara*
14.20 – 14.40	36	815	E3.2 - Real-time detection of the activity of a dog *Germain Lemasson, Dominique Duhaut and Philippe Lucidarme*
14.40 – 15.00	61	77	E3.3 - Humanoid robot programming through face expressions *Alvaro Uribe, Hernando Leon-Rodriguez and Byron Perez*

Session – F3: Wheeled Systems Session Chair: Khaled M. Goher			
Date: Wednesday 17 July 2013		Time: 14.00 – 15.00	Venue: Broadway Room
Time	Paper ID	Proc. Page	Presentation
14.00 – 14.20	82	609	F3.1 - Design and locomotion modes of a small wheel-legged robot *Ioan Doroftei and Ion Ion*
14.20 – 14.40	58	479	F3.2 - Design of leaping behavior in a planar model with three compliant and rolling leg *Ya-Cheng Chou, Ke-Jung Huang, Wei-Shun Yu and Pei-Chun Lin*
14.40 – 15.00	110	133	F3.3 - Design of a reconfigurable wheelchair with a sit-to-stand facility for a disabled kid *K. M. Goher, S. Al-Harthi, M. Al-Rashdi, A. Al-Kindi, L. Al-Hadhrami, M. Shafiq, A. Al Yahmadi and S. Fadhallah*

15.00 – 15.20	**Tea Break**	Venue: Lobby

15.20 – 15.40	**Closure**	Venue: Harris, Jones, Broadway Rooms

15.40 –	Laboratory Tour Centre for Autonomous Systems, University of Technology, Sydney Australian Centre for Field Robotics, University of Sydney

CLAWAR 2013 Programme Summary

Sunday 14 July 2013		
13.00-18.00	Registration open	(ACC)
18.00-20.00	Welcome Reception	(ACC)

Monday 15 July 2013			
Time	Programme session		
09.00-09.20	Opening		(ACC)
09.20-10.20	Keynote-1: Homayoon Kazerooni		(HJBR)
10.20-10.40	**Coffee**		(Lobby)
10.40-12.40	Session A1 (Harris)	Session B1 (Jones)	Session C1 (Broadway)
10.40-11.00	73	74	43
11.00-11.20	25	24	9
11.20-11.40	30	90	59
11.40-12.00	53	52	105
12.00-12.20	19	69	51
12.20-12.40	100	42	
12.40-14.00	**Lunch**		(AFC)
14.00-15.20	Plenary lectures (G)		(HJBR)
14.00-14.20	10 - Qilong Yuan and I-Ming Chen		
14.20-14.40	89 - Gurvinder S Virk, Carol Herman, Roger Bostelman and Tamas Haidegger		
14.40-15.00	115 - Ki-Yeop Sung and Seungbin Moon		
15.00-15.20	05 - M. Osman Tokhi		
15.20-15.40	**Tea**		(Lobby)
15.40-17.40	Session D1 (Harris)	Session E1 (Jones)	Session F1 (Broadway)
15.40-16.00	63	81	47
16.00-16.20	112	37	46
16.20-16.40	66	32	39
16.40-17.00	56	57	15
17.00-17.20	86	93	54
17.20-17.40	41		
17.40-18.20	CA AGM		(HJBR)

Tuesday16 July 2013			
Time	Programme session		
09.20-10.20	Keynote-2: Yvan Baudoin		(HJBR)
10.20-10.40	**Coffee**		(Lobby)
10.40-12.40	Session A2 (Harris)	Session B2 (Jones)	Session C2 (Broadway)
10.40-11.00	6	33	26
11.00-11.20	95	20	34
11.20-11.40	98	21	45
11.40-12.00	29	75	97
12.00-12.20	106	91	22
12.20-12.40	72	92	
12.40-14.00	**Lunch**		(AFC)
14.00-15.00	Keynote-3: Marcus Pandy		(HJBR)
15.00-15.20	CA Report & CLAWAR2014/15		(HJBR)
15.20-15.40	**Tea**		Lobby)
15.40-18.00	Session D2 (Harris)	Session E2 (Jones)	Session F2 (Broadway)
15.40-16.00	49	104	7
16.00-16.20	35	76	67
16.20-16.40	40	14	107
16.40-17.00	64	60	108
17.00-17.20	77	8	88
17.20-17.40	55	11	28
17.40-18.00			23
19.30 - 22.00	**Banquet**		(M-III)

Key:
ACC: Aerial Conference Centre lobby
AFC: Aerial function Centre
M-III: Matilda III, Pier 26, Cockle Bay
HJBR: Harris, Jones, Broadway Rooms

Wednesday 17 July 2013			
Time	Programme session		
09.20-10.20	Keynote-4: Yohihiko Nakamura		(HJBR)
10.20-10.40	**Coffee**		(Lobby)
10.40-12.40	Session A3 (Harris)	Session B3 (Jones)	Session C3 (Broadway)
10.40-11.00	27	102	87
11.00-11.20	78	65	13
11.20-11.40	12	99	48
11.40-12.00	94	16	17
12.00-12.20	31	68	18
12.20-12.40	38	79	96
12.40-14.00	**Lunch**		(AFC)
14.00-15.00	Session D3 (Harris)	Session E3 (Jones)	Session F3 (Broadway)
14.00-14.20	84	70	82
14.20-14.40	44	36	58
14,40-15.00	113	61	110
15.00-15.20	**Tea**		(Lobby)
15.20-15.40	**Closure**		(HJBR)
15.40-	**Laboratory Tour** Centre for Autonomous Systems, University of Technology, Sydney Australian Centre for Field Robotics, University of Sydney		

Note:
Numbers in the presentation slots are ID#s of papers